watershed focus
Spring / Summer 2002
New Jersey Department of Environmental Protection

what's in focus

DROUGHT EMERGENCY CONTINUES IN NEW JERSEY

Despite coordinated water management measures, transfers of water, reductions in flows, and voluntary water conservation, New Jersey continues to suffer serious water shortfalls due to the lack of consistent, steady rainfall. Although rainfall in April and May was close to normal and helped to raise reservoir levels, the state remains in a drought emergency.

Rainstorms during this spring have helped to green up vegetation, improve stream flows temporarily, and provide the illusion that the State's water supply situation has improved dramatically. However, two months of rainfall at near-normal levels cannot erase the rainfall deficit that has accumulated from 15 out of the last 19 months having significantly below normal rainfall. (Think of getting only 2/3 of your salary for 15 months - it will take more than two months at your usual salary to pump your bank account back up to normal.)

From October through April, precipitation should be recharging the shallow groundwater system. However, since rainfall during this period in 2001-2002 was at record lows, very little recharge occurred and groundwater levels are still very low. These levels normally peak in April and May and then decline from May through October, as evapotranspiration from growing plants pulls water out of the shallow groundwater system. We are starting summer with near-record low shallow groundwater levels. Therefore, even with normal amounts of precipitation now, we would still have record low, shallow groundwater levels this summer. Without a long period of higher than normal rainfall, the next real opportunity for recharging shallow groundwater will be in the fall of 2002.

(**DROUGHT** *continued on page 2)*

What can you do to help protect New Jersey's vital water resources like Barnegat Bay? Find lots of useful tips by ordering the brochures on page 2.

watershed *focus*

is a publication concentrating on watershed management, stormwater and nonpoint source pollution management issues in New Jersey. Send comments and subscription requests to:

New Jersey Department of
Environmental Protection
Environmental Planning and Science
Division of Watershed Management
PO Box 418
Trenton, NJ 08625-0418
609-292-2113
khoffman@dep.state.nj.us
www.state.nj.us/dep/watershedmgt

James E. McGreevey, Governor
Bradley M. Campbell, Commissioner
Ernest Hahn, Assistant Commissioner
Mary T. Sheil, Director
Debra Hammond, Assistant Director
Kerry Kirk Pflugh, Bureau Chief
Kyra Hoffmann, Editor
Erin Brodel, Designer

Contributors:
Danielle Donkersloot, Colleen Gould,
Christine Hall and Kathy Urffer

This newsletter is published with funding provided by the U.S. Environmental Protection Agency under Section 319 of the federal Clean Water Act.

printed on recycled paper

New Jersey's
5 Water Regions
and
20 Watershed Management Areas

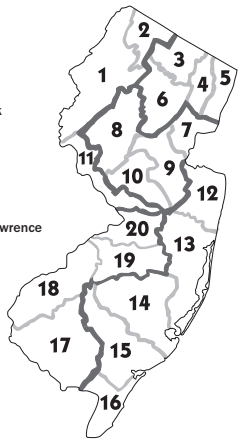
Northwest
(609) 633-3812
1. Upper Delaware
2. Walkill
11. Central Delaware

Northeast
(609) 633-1179
3. Pompton, Pequannock, Wanaque, Ramapo
4. Lower Passaic, Saddle
5. Hackensack, Hudson, Pascack
6. Upper & Middle Passaic, Whippany, Rockaway

Raritan
(609) 633-7020
7. Arthur Kill
8. North & South Branch Raritan
9. Lower Raritan, South River, Lawrence
10. Millstone

Atlantic Coastal
(609) 984-6888
12. Monmouth
13. Barnegat Bay
14. Mullica
15. Great Egg Harbor
16. Cape May

Lower Delaware
(609) 633-1441
17. Maurice, Salem, Cohansey
18. Lower Delaware
19. Rancocas
20. Assiscunk, Crosswicks, Doctors



DROUGHT

(continued from page 1)

In New Jersey the highest stream flows occur during late fall through spring, November through May. Throughout much of this period in 2001-2002, the majority of New Jersey's streams have been at or near record low levels due to record low rainfall. With each rain event stream flows rise but quickly fall to levels far below normal for this time of year. Even with the current rains, stream flows are still significantly below normal for this time of year. Stream flows are not expected to return to normal until the shallow groundwater systems recover to normal levels.

The effect of a rainstorm on the drought can vary tremendously depending on how fast and hard the rain falls, and for how long the rain continues. A long, light rain allows more water to soak into the ground and is therefore good for ground water recharge, long term stream flow, and plant growth. Short, hard rains dump so much water at once that it can't soak into the ground, resulting in more runoff. Runoff is good for filling reservoirs, but does not improve groundwater and only temporarily improves stream flow. Therefore, even though reservoir levels have been rising with the rainfall in March and April, we must still conserve as much water as possible, until both shallow groundwater and stream flows return to near normal levels.

For more information on the drought, call 1-800-4-ITS-DRY or visit www.njdrought.org

See Page 3 for Conservation Tips you can do to save water around your house!

NEW Brochures Available!

To get your copy of the new "What's a Watershed?" brochure or the new Drought brochure call the NJDEP Public Access Center at 1-800-337-5669

WATER CONSERVATION TIPS

Indoor Water Conservation Tips

Repair leaky toilets.
A leaky toilet can waste up to 200 gallons of water per day. A toilet leak can be detected by adding a few drops of food coloring to the water in the toilet tank. If the colored water appears in the bowl, the toilet is leaking.

Repair leaky pipes and faucets.
A slow steady drip can waste 350 gallons of water per month. Not only does this waste water it increases your sewer bill and can increase your energy costs if it is hot water.

Turn off faucets when not in use.
Do not let the faucet run when shaving, use rinse water in the sink.
Do not let the faucet run when brushing your teeth, use a glass of water to rinse.
Do not let the faucet run until the water is cold enough to drink, refrigerate a pitcher of water.
Do not let the faucet run when rinsing vegetables, use a pan of water or the sink instead.
Defrost foods in the refrigerator or microwave rather than under running water.

Install water conserving faucet aerators and showerheads.

If you do not have a low flow toilet, place a weighted plastic bottle in the tank to displace a portion of the water, taking care to keep the bottle clear of any moving parts.

Take shorter showers or a shower instead of a bath.

Run washing machines only when full and on the proper load size selection.

Run dishwashers only when full using the water saver feature if available.
If pre-rinsing dishes use the sink and do not let the faucet run.

Turn off icemakers and use trays instead.

Use paper or recyclable plates and cups to cut down on dishwashing.

Use a broom or blower instead of the hose to clean off sidewalks and driveways.

Use water from the dehumidifier to water household plants.

If upgrading appliances or plumbing fixtures choose the ones that conserve water. A high efficiency, front loading washing machine can use 30 percent less water than a top loading model.

Outdoor Water Conservation Tips

If lawn watering is permitted, water it only during very dry periods, giving it only as much water as the soil can absorb.
Over-watering is one of the most common mistakes made in lawn care. Avoid frequent shallow waterings on established turf. Water early in the day.

If watering don't water the sidewalks, driveway or street.

Don't water on windy days.

Reposition downspouts onto lawn and garden areas rather than sidewalks or the driveway.

Use mulch in gardens and around trees and shrubs.
Mulching can add nutrients, make the soil more workable, aid rainwater penetration and improve the moisture-retaining capacity of the soil.

Long-term landscaping considerations.

While starting new gardens is not recommended during a drought, here are some long-term concepts to keep in mind once rainfall returns to normal.

Minimize your lawn.
As an alternative to large lawns, grow trees, shrubs, flowers, ground covers or other plants that are suitable for your soil type and climate. Consider using native plants that are adapted to your local environment and will be less likely to need frequent watering, fertilization and pesticide use.

Many of us enjoy growing our own vegetables, fruits, flowers and herbs. By using proper gardening techniques, you can produce plants to be proud of while preserving the soil and its fertility. Rainfall absorption will be enhanced, and local streams will be protected from sediments, nutrients and chemicals. To get the most out of your garden, it's important to pick the right spot for planting or the right plants for the spot. Choose a site with the recommended amount of sunlight and the correct soil type for the plants you want to grow. Or, if its a specific site in which you want to create a garden, choose plants with suitable soil and lighting requirements.

For more tips on protecting our water resources, visit
www. state.nj.us/dep/watershedmgt/cleanwaterbook/waterbook_tble.htm

DEP Commissioner Warns Urban Anglers About Health Risks of Eating Contaminated Crabs

On May 24th, the New Jersey Department of Environmental Protection Commissioner Bradley M. Campbell warned the fishing community of the large health risks linked to the consumption of blue claw crabs from the Newark Bay region. Based on data analyzed by DEP more than a year ago, the agency determined that eating blue claw crabs, contaminated with dioxin and polychlorinated biphenyls (PCBs), poses a highly increased risk of developing cancer and of harm to the developing brains of unborn and young children.

"These alarming risks demand a strengthened effort to alert the public not to catch, and not to eat, crabs from the Newark Bay and the rivers that feed it," said Campbell, who was joined at a news conference by First Lady Dina Matos McGreevey. "This effort is overdue, and requires not just the signs and warnings that have been issued in the past, but direct work with local groups who will help DEP reach out to this multi-cultural, multi-lingual community."

A site-specific risk assessment, using consumption information obtained from anglers and crabbers in the region, conducted by the DEP determined there is up to a 5 in 1,000 chance of developing cancer if five or more blue claw crabs are eaten per day over a lifetime. This risk is 5,000 times higher than acceptable levels for safety, which is one in a million.

"Based on conservative assumptions that are protective of public health, this means that in order to reach an acceptable level of risk - one in a million - a person could eat only one crab about ever 20 years," said Campbell. The magnitude of these risks was one of the highest encountered by the DEP in any context. "Our mandate is for everyone to have access to our waters. Our long-term goal is to clean up the waterways so that people's health is safe. This effort will require working with the responsible parties to clean up this natural resource," he added.

A public education campaign, targeted at specific communities, has been launched by the Department of Environmental Protection with local and county health departments, community-based organizations, city governments, schools, marine conservation organizations and various networks throughout the Newark Bay region. The Department is coordinating its efforts with the state Department of Health and Senior Services. The Department will make four $10,000 grants available to community groups to do public outreach, according to Campbell.

An integral component to this public outreach effort includes the posting of signs - in English, Spanish and Portuguese - along the banks of the waters in the 32-municipality Newark Bay region. Previous studies of the region indicated that these were the populations of concern. Additional outreach will determine if signs and other communication methods are needed in additional languages.

"Although further studies will be needed to examine and to verify our results, there is enough very alarming data about the health risk that warrants immediate action and public outreach," Campbell said. DEP staff members will also conduct site-specific visits at fishing and crabbing locations in the region, along with representatives and state officials from the targeted communities, to distribute multi-lingual flyers. Future initiatives include a series of community meetings to provide information of the health risks.

The Newark Bay region is comprised of Newark Bay; the Hackensack River up to the Oradell Dam; Arthur Kill; Kill Van Kull; tidal sections of all rivers and streams that run into these water bodies; and the Passaic River downstream of Dundee Dam, and streams that feed into this section of the river. It is a highly industrialized urban area including six counties and 32 municipalities in Bergen, Essex, Hudson, Middlesex, Union and Passaic counties. In the 1980's, research showed elevated levels of dioxin and polychlorinated biphenyls (PCBs) in five species of fish and the blue claw crab in the Newark Bay region. One of the sources for dioxin contamination of the sediment of the region is Diamond Alkali Company, later known as Diamond Shamrock Chemicals Company. The site, where agent orange, a defoliant was manufactured between 1951 and 1969, and the adjoining six-mile stretch of the Passaic River, is a federal Superfund site.

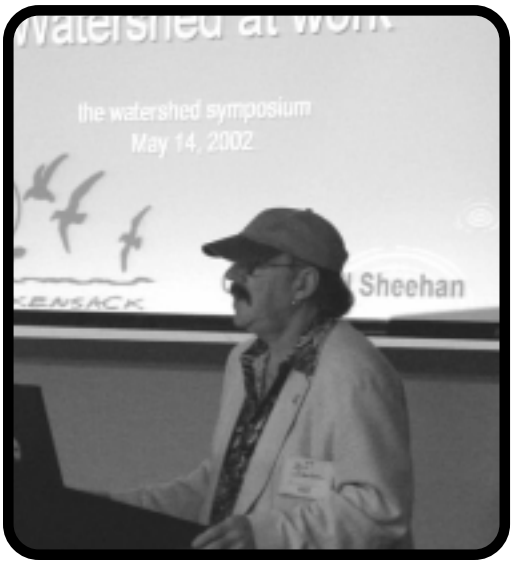
Dioxin accumulates in the food chain and can be found in trace amounts in meat and dairy products as well as fish. In fish, dioxin levels can accumulate to 100,000 times that of the surrounding environment.

Advisories and a ban on the consumption of crabs were put in place to protect public health. These advisories were issued through the New Jersey Fish & Wildlife Digest, a free Department publication for anglers. However, studies done during the mid 1990's demonstrated that fisherman routinely ignored the warnings and continued to catch and to eat crabs. In addition, the study revealed that many crabbers took their catch home and shared it with their families. This is a source of concern since those most at risk include unborn children, infants, and children under the age of 15, pregnant women, nursing mothers and women of childbearing age.

"The presence of high levels of certain carcinogens in blue claw crabs collected in the Newark Bay region poses a serious health risk to anyone who consumes them," said Clifton R. Lacy, M.D., Commissioner of the Department of Health and Senior Services. "I strongly urge fishermen, their family members and all New Jerseyans not to eat crabs caught in these waters." Catching or eating crabs caught in these waters has been banned since 1994. Nevertheless, crabs are still being caught and eaten during their three-month season.

2002 Watershed Management Awards Presented

At the Watershed Symposium on May 14th, the New Jersey Department of Environmental Protection's Commissioner Bradley M. Campbell presented ten Watershed Management Awards. The Watershed Management Awards program is a special opportunity for the Department to express recognition and appreciation to segments in the watershed community for their exceptional result-oriented accomplishments. The awards program also serves to create public awareness, understanding and support for watershed management by recognizing the effectiveness and success of the awardees. The 2002 honorees are:



Left:
DEP Commissioner Bradley M. Campbell addresses the audience at the Watershed Symposium.

Right:
Captain Bill Sheehan discusses the Hackensack Riverkeeper Program

BUSINESS / INDUSTRY

This category applies to businesses and industries that have provided action, commitment and support to practicing water management as pat of their policies and operations and who have promoted this practice.

Bristol-Myers Squibb Company

First Placement

Bristol-Myers Squibb (BMS) Company has implemented a watershed management approach to ensure natural resource sustainability and environmental stewardship at its Hopewell Campus (Mercer County), comprised of 433 acres of agricultural, forest, open field, wetland, stream, pond and developed habitats. BMS is one of the first corporations to design and implement a watershed approach to manage natural resources at an operating facility.

Landis Sewerage Authority

Second Placement

The Landis Sewerage Authority (Cumberland County), illustrates effective watershed management through innovative uses for its wastewater and biosolids. After treating wastewater by nitrification/denitrification biological process, all of the effluent is land applied to recharge the Cohansey aquifer with between five to six million gallons per day of reclaimed water. In addition, the Authority owns and operates a 380 acre farm where biosolids are land applied and various crops are grown for animal feed.

Representatives from Bristol-Myers Squibb accept the First Place Award in the Business / Industry Category. Pictured from left to right are Mark Caine, Jerry Sanseverino, Mary Beth Koza and DEP Commissioner Bradley M. Campbell.

2002 Watershed Management Awards Presented

COUNTY / REGION

This category applies to counties, public partnerships, and regional agencies, which have integrated watershed management policies as part of their planning, zoning, and economic development activities.

Clyde Potts Watershed Conservation Project
First Placement

The Townships of Randolph and Mendham, the Morris County Park Commission, the Morris Land Conservancy and the Southeast Morris County Municipal Utilities Authority created a strong alliance to permanently preserve almost 1,000 acres of undeveloped headwaters of the Whippany River as part of the Clyde Potts Watershed Conservation Project. This vision and commitment to the Conservation Project has prevented development that would have adversely impacted the water quality of the Clyde Potts Reservoir in the Whippany River watershed. It guarantees that one of Morris County's few surface water reservoirs will always remain a pristine source of potable water.

Ten Towns Great Swamp Watershed Management
Committee Second Placement

The Ten Towns Great Swamp Watershed Management Committee, an inter-municipal organization created in July 1995 to develop a consensus among interested parties and to create a Great Swamp Watershed Management Plan, has successfully completed a number of initiatives as part of an overall plan to protect the Great Swamp watershed. These include environmental assessments of several subwatersheds, stream corridor restoration and stormwater management basin retrofitting projects, local water quality monitoring programs and preparation of model environmental ordinances for the ten municipalities in the watershed.

EDUCATION / LEARNING INSTITUTION

This category applies to activities by a school, educational or watershed organization or learning institution to significantly enhance awareness, information and education on the importance of watershed management issues and programs.

Citizens United to Protect the Maurice River and its Tributaries
First Placement

Citizens United to Protect the Maurice River and its Tributaries produced a teacher's guide entitled "Down Jersey: Celebrating Our Sense of Place." This guide is part of an overall effort to raise awareness and appreciation of the unique natural and cultural resources of South Jersey and to encourage both stewardship and protection by teachers and their students. Citizens United worked in partnership with the National Park Service and New Jersey Network to create the successful and effective film, "Down Jersey".

Meadowlands Environment Center
Second Placement

The Meadowlands Environment Center (MEC) has demonstrated its commitment to watershed education through a comprehensive Watershed Education Initiative. This program includes three key components: professional development for teachers, district wide self guided field trips and educational outreach to schools and the general public.

Above: Jane Galletto (left) and Christine Raabe (right) accept the award on behalf of Citizens United to Protect the Maurice River and its Tributaries from DEP Commissioner Bradley M. Campbell (center).

Left: Kathryn Porter, Steve Mountain and Harry Gerkin (from left to right) accept the award for the Clyde Potts Watershed Conservation Project from DEP Commissioner Bradley M. Campbell.

2002 Watershed Management Awards Presented

MUNICIPALITY

This category applies to municipalities which have promoted and integrated watershed management policies as part of their planning, zoning, housing and economic development.

Township of Willingboro
First Placement

The Township of Willingboro (Burlington County) has demonstrated commitment to focusing on nonpoint source pollution (NPS) within the municipality. The Township engineer's office designed and constructed a wetland project at a failed major stormwater outfall in the township. The designer's motivation was to create biomass within the drainage corridor that would promote sedimentation and filtration of the stormwater flowing out of the outfall. This innovative project improved the quality and quantity of stormwater discharged to surface waters.

Township of Vernon
Second Placement

The Township of Vernon has taken a proactive approach to watershed management through a number of projects initiated in 2001. These have included biological and chemical stream monitoring activities and stream clean up projects. The Commission also completed a clean up of a 12-mile section of Waywayanda Creek to permit canoe navigation.

DWM Assistant Director Debra Hammond (left) and DWM Director Mary T. Sheil (right) present the First Place Award for Municipality to Denise Rose (center) of the Township of Willingboro.

WATERSHED GROUPS

This category applies to watershed associations or related groups who have demonstrated good stewardship through implementation of good watershed management practices or working in partnership with the community to plan for a sustainable future for their watershed.

Lake Mohawk Country Club
First Placement

Located in the Walkill River watershed, Lake Mohawk Country Club, a private community with 2600 residences in Sparta and Byram Townships, surrounds Lake Mohawk. As the quality of the lake began to decline in the early 1980's, studies revealed that the demise of the lake's water quality was directly linked to the development of the watershed. Roadway runoff, lawn fertilizer and septic related nutrients had dramatically increased the lake's phosphorus load, resulting in accelerated eutrophication. A restoration master plan was developed and implemented. Major components included management of stormwater through NPS best management practices, adoption of septic pumping and zero phosphorus fertilizer ordinances, lake water quality monitoring and treatment and community education program.

The Lockatong / Wickecheoke Watershed Project
Second Placement

The Lockatong / Wickecheoke Virtual Watershed Tour was developed in 1998 by the Lockatong / Wickecheoke Watershed Project to reach landowners, local government and county and state agencies. The Virtual Tour was created as an innovative tool to raise awareness of the watershed and to encourage support for the development of a Watershed Management Plan for the Lockatong / Wickecheoke Watershed.

Ernie Hofer (left) and Francis Smith (center) from the Lake Mohawk Country Club accept their award from DEP Commissioner Bradley M. Campbell (right).

New Jersey Rainstick Contest Winners Awarded

The New Jersey Rainstick Contest is a unique and rewarding opportunity for students to explore the wonders of water in their community. From their faucets to the rivers, lakes and oceans they swim, water is a critical part of their everyday life. Sponsored by the New Jersey Department of Environmental Protection, the Wetlands Institute and the Watershed Partnership for New Jersey, this contest provides a medium for teachers and their students to understand, appreciate and protect this precious resource.

This year's contest theme was "A Raindrop's Journey Through Your Watershed." Students created and decorated their own rainsticks and wrote a narrative interpreting the theme. Judging was based upon theme depiction, color and design, overall appearance, creativity, originality and sound.

Prizes were awarded for the top three rainsticks for grades 3, 4, 5 and 6. The honorees were presented with the award at the Watershed Symposium on May 14th. The honorees are:

Grade 3:

First Place - **Jazmin Hildebrandt and Vinny LaRocca**
from the Winfield School in Winfield
Second Place - **Victoria Wiseman**
from the Rush Intermediate School in Cinnaminson
Third Place - **Jessica Pierce**
from the Rush Intermediate School in Cinnaminson

Grade 4:

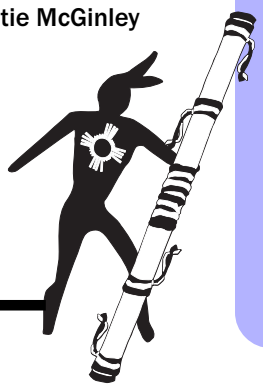
First Place - **Ashley Castillo**
from the E.H. Bryan School in Cresskill
Second Place - **Joseph Gervasini**
from the Lanoka Harbor School in Manchester
Third Place - **Carly McGinnis, Kassandra Grimes and Michele Marandola** from the Oldsman Township Elementary School in Pedricktown

Grade 5:

First Place - **Josh Russell, Michael Villanova and Mark Lynch**
from the Fredrick Priff Elementary School in Waretown
Second Place - **Katherine DiBenedetto, Aliya Whitaker and Victoria McCoy**
from the Hillside School in Montclair
Third Place - **Shane Curry**
from the Rush Intermediate School in Cinnaminson

Grade 6:

First Place - **Kristen Thompson**
from the Park Middle School in Scotch Plains
Second Place - **Maria Mafaro, Katelynn Fioro, Alyssa Meyers and Katie McGinley**
from St. Joseph's School in Newton
Third Place - **Maggie McLaughlin**
from the Park Middle School in Scotch Plains



HISTORY OF THE RAINSTICK

Many cultures adopted objects or instruments related to their need for rain. Sometimes these objects reflected the belief that if the people imitated the sound of rain it would remind the spirits that rain was needed. The rainstick, a tubular rattle which when inverted produces the sound of rainfall, was used by many cultures in South America, Africa and China to call for rain.

A rainstick is a product of the environment in which it is found. Rain forest people from South America and Africa create rainsticks from bamboo or the midrib of a raphia palm frond. A section of the center stem is cut from the palm frond, split lengthwise, and hollowed out. The tube is closed at the ends, filled with rice and fastened together with palm slivers. The grains of rice tapping against each other, the slivers, and the sides of the tube create the muted sounds of raindrops on ferns, leaves, and the damp forest floor.

In the desert communities, rainsticks are made from different types of cactus. The sound produced by a rainstick is determined by the material from which the tube is constructed, its length and circumference, the tiny objects enclosed, and the position of the internal needles. The needles or pegs may bisect the tube or only extend halfway through, like the spokes in a wheel. Also, the way in which the rainstick is "played" affects its sound. Today, the instrument is used in a variety of musical forms, such as Bluegrass music. It is used by people in meditation, for relaxation, or as a shaker type of rhythmic instrument.

GEESE CRY FOWL

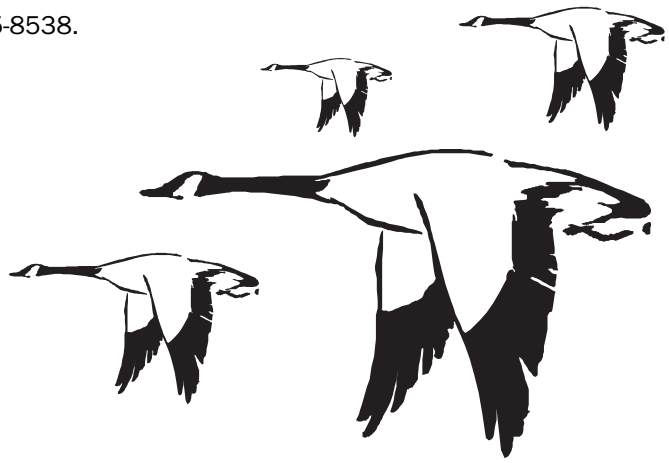
On February 15, 2002, the County of Morris Board of Chosen Freeholders and the Whippany River Watershed Action Committee sponsored the 3rd Annual All County Goose Damage Management Workshop. People came from not only Morris County, but from Atlantic, Bergen, Middlesex and other counties as well.

The 2002 workshop featured a case study that demonstrated multiple goose damage management techniques that were used during a lakeside environmental restoration at Burnham Park in Morristown, NJ in 2001. Techniques included habitat modification, a pilot volunteer program for population management, no feed signage and community-based education, planning and participation. Funding for the restoration project came to the Whippany River Watershed Action Committee from U.S. EPA and the New Jersey Department of Environmental Protection Division of Watershed Management's 319(h) grant program. The Action Committee is a 13-member intermunicipal watershed association whose members include Denville, East Hanover, Florham Park, Hanover, Madison, Mendham Borough, Mendham Township, Morris Plains, Morris Township, Morristown, Mountain Lakes, Parsippany-Troy Hills and Randolph.

At the workshop, experts from USDA Wildlife Services, the Humane Society of the United States, TRC Omni Environmental Corporation and Sarah Cavanaugh Landscape Design explained how to reduce goose damage to parks, campuses, water bodies and other public and private lands and waters.

Recent studies of the Whippany River, conducted by Dr. George Van Orden of the Hanover Township Regional Health Department with funding from NJDEP Division of Watershed Management, have revealed that waterfowl – including Canada Geese – and domestic pets are the main sources of unacceptably high levels of fecal matter in the Whippany River. NJDEP and U.S. EPA have agreed that levels of fecal coliform in the river must be reduced. They have assigned a Total Maximum Daily Load (TMDL) that mandates a 58% reduction in fecal coliform levels in the river. The Whippany River is a drinking water source for more than one million people in six New Jersey counties.

To learn more about the Whippany River Action Committee, this workshop or the topics covered please contact Mary Arnold, Facilitator, at 973-605-8538.



New Water Resource Preservation Planning Tool

by Christine Hall, North Jersey Resource Conservation & Development

The Upper Delaware Watershed Management Project's (UDWMP) Open Space & Farmland Preservation Committee has developed a planning tool to identify important water resources for preservation in the Upper Delaware Watershed. The Committee recently presented the **Water Resource Evaluation System** that was developed to assist preservation groups in prioritizing lands that should be preserved because they have good ground-water-recharge and healthy riparian areas.

The UDWMP's Open Space & Farmland Preservation Committee's overall objective in the watershed management planning process has been to encourage the preservation of the Upper Delaware's unique water resources. To that end, the Committee has been working to build the capacity of those groups who preserve lands in this region. In 2001, the Committee brought together technical water resource experts to assist in developing the **Water Resource Evaluation System** (**WRES**) Methodology.

The WRES's methodology uses the Geographical Information System (GIS) to combine the New Jersey Geological Survey's Ground-Water-Recharge Model which identifies those areas which have high to no ground-water-recharge, and the North Jersey Resource Conservation & Development's Riparian Health Assessment Methodology, which identifies healthy and impacted riparian areas. The WRES looks at both the ground water and surface water resources, but does not weight one as more important than the other. The WRES shows the presence of absence of these water resources.

Groups working to preserve lands in the Upper Delaware Watershed can use the **Water Resource Evaluation System** to identify where important water resources are and to further prioritize whether one land may be more important than another for preservation. State, county, municipal and regional representatives can also use the WRES during site plan reviews, master plan revisions, and when assessing future development impacts to the water resources in this region. As an educational tool the WRES can be used to heighten the community's understanding of these water resources.

The **Water Resource Evaluation System** is available on the Upper Delaware Watershed Management Project's website at www.upperdelaware.org. The website also has a PowerPoint Presentation and the WRES Narrative which describes how the WRES was developed and results. A CD with this information can also be obtained by contacting: Christine Hall, Project Director, Upper Delaware Watershed Management Project, chall@upperdelaware.org or by calling North Jersey Resource Conservation & Development at (908) 735-0733.

Hackensack Riverkeeper Begins Coles Brook Restoration Project

by Kathy Urffer, Hackensack Riverkeeper

It was a somewhat chilly day for a picnic, but nonetheless on March 23rd, Hackensack Riverkeeper held its Coles Brook Restoration Kickoff at Staib Park in Hackensack. In between potato salad and hot apple cider, information was shared regarding work that will soon begin at this City park located at Summit and Coles Avenues. Through this project Hackensack Riverkeeper will both restore a 750-foot stretch of habitat along Coles Brook (which runs through the park) and help improve the water quality in the lower Hackensack River watershed.

The day's activities included a stream cleanup undertaken in conjunction with members of New Jersey Clean Community Water Watch and River Assessment Team (RATs) and Biological Assessment Team (BATs) training by NJDEP Watershed Ambassador Marianne Butler.

Approximately twenty dedicated volunteers will be needed for a few weekends over the course of the next two years to install the bulk of the native plantings and care for them. Volunteers should be capable of the physical labor required for gardening. Children above the age of 7 are invited to help, with adult supervision. Volunteers are needed for planting, weeding, watering, monitoring of growth, and removal of invasive plants.

We fully expect that this project will create a stronger sense of stewardship and community in the surrounding area and are excited about the environmental enhancement that this project will provide to the river and the city of Hackensack.

People interested in volunteering should contact Kathy Urffer at (201) 692-8440 or kathyu@hackensackriverkeeper.org.

The Coles Brook Restoration Project is a cooperative venture between Hackensack Riverkeeper, the City of Hackensack and TRC Omni Environmental Corporation. Funding for the project is provided through a NJDEP grant under Section 319(h) of the Federal Clean Water Act to mitigate nonpoint source pollution.

Watershed AmeriCorps Ambassador member Marianne Butler explains volunteer monitoring techniques.

Jeremiah Bergstrom, TRC Omni Environmental Corporation explains the overall plan.

STUDENTS CELEBRATE THE WONDERS OF WATER

Across the state in May, over 2,000 students learned about the importance of water resources at NJ Project WET Water Festivals. Through a mini-grant program sponsored by the NJ Department of Environmental Protection and the Wetlands Institute, schools were encouraged to use Project WET (Water Education for Teachers) lessons as part of an activity-packed Water Festival.

The goal of these programs is to educate students and the greater community about the importance and value of water and to teach about the local watershed. "The activities and lessons are fun for students, but the topic is a serious and important one. Water is a precious resource, from a scientific and environmental standpoint, but also economically, culturally and historically," said Colleen Gould, State Coordinator for Project WET.

This year's NJ Project WET Water Festivals were held at Alexander Elementary School in Hamilton Square, Oxford Township Schools in Oxford, Howell Middle School North in Howell, Far Hills Country Day School in Far Hills, Halstead Middle School in Newton, the Roberge School in River Vale and the Little Egg Harbor Intermediate School in Little Egg Harbor.

Each festival consisted of structured learning stations where students actively engage in hands-on lessons and investigations. Students explore the physical properties of water at the *H2Olympics*, act as molecules as they go through *the Incredible Journey*, taste test water from five different sources, and discover his/her watershed address with the local Watershed AmeriCorps Ambassador.

For more information about the Water Festivals and Project WET, contact Colleen Gould at (732) 292-4672.

NJ Watershed Ambassador Steve Janasie explains the NJ Watershed Puzzle to Little Egg Harbor students Zachary Yaede (center) and Zach DiPaolo (right).

New Jersey Department of Environmental Protection
Division of Watershed Management
PO Box 418
Trenton, NJ 08625-0418
James E. McGreevey, Governor
Bradley M. Campbell, Acting Commissioner